



Atty Dkt 2225-0003
PATENT

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7/13/01
Date

[Signature]
Signature

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of:

CHOE and FELDMANN

Confirmation No.: 3956

Serial No.: 09/775,879

Group Art Unit: n/a

Filing Date: February 2, 2001

Examiner: n/a

Title: DWF7 MUTANTS

**STATEMENT TO SUPPORT FILING AND SUBMISSION IN ACCORDANCE
WITH 37 C.F.R. §§ 1.821-1.825**

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

The undersigned hereby states that the content of the attached papers and the computer-readable copy of the Sequence Listing, submitted in accordance with 37 C.F.R. §§ 1.821(c) and (e), respectively, are the same.

Respectfully submitted,

Date: 7/13/01

By: [Signature]
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SEQUENCE LISTING

<110> Choe, Sunghwa
Feldmann, Kenneth A

<120> Dwf7 MUTANTS

<130> 2225-0003

<140> 09/775,879

<141> 2001-02-02

<150> 60/179,901

<151> 2000-02-02

<160> 25

<170> PatentIn Ver. 2.0

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 35 40 45
 Leu His Glu Thr Leu Ser Ile Thr Asn Ser Leu Lys Arg Val Asn Lys
 50 55 60
 Asp Val Tyr Gly Leu Thr Pro Phe Leu Phe Asp Phe Thr Glu Lys Thr
 65 70 75 80
 Tyr Ala Ser Leu Leu Pro Arg Asn Asn Leu Ile Arg Glu Phe Phe Ser
 85 90 95
 Leu Trp Ala Val Val Thr Val Phe Gly Leu Leu Leu Tyr Leu Ile Thr
 100 105 110
 Ala Ser Leu Ser Tyr Val Phe Val Phe Asp Arg Thr Ile Phe Asn His
 115 120 125
 Pro Lys Tyr Leu Lys Asn Gln Met Tyr Leu Glu Ile Lys Leu Ala Val
 130 135 140
 Ser Ala Ile Pro Thr Met Ser Leu Leu Thr Val Pro Trp Phe Met Leu
 145 150 155 160
 Glu Leu Asn Gly Tyr Ser Lys Leu Tyr Tyr Asp Val Asp Trp Glu His
 165 170 175
 His Gly Leu Arg Lys Leu Leu Ile Glu Tyr Ala Thr Phe Ile Phe Phe
 180 185 190
 Thr Asp Cys Gly Ile Tyr Leu Ala His Arg Trp Leu His Trp Pro Arg

195	200	205
Val Tyr Lys Ala Leu His Lys Pro His His Lys Trp Leu Val Cys Thr		
210	215	220
Pro Phe Ala Ser His Ala Phe His Pro Val Asp Gly Tyr Phe Gln Ser		
225	230	235 240
Leu Ser Tyr His Ile Tyr Pro Met Ile Leu Pro Leu His Lys Ile Ser		
	245	250 255
Tyr Leu Ile Leu Phe Thr Phe Val Asn Phe Trp Ser Val Met Ile His		
	260	265 270
Asp Gly Gln His Met Ser Asn Asn Pro Val Val Asn Gly Thr Ala Cys		
	275	280 285
His Thr Val His His Leu Tyr Phe Asn Tyr Asn Tyr Gly Gln Phe Thr		
	290	295 300
Thr Leu Trp Asp Arg Leu Gly Gly Ser Tyr Arg Arg Pro Glu Asp Ser		
305	310	315 320
Leu Phe Asp Pro Lys Leu Lys Met Asp Lys Lys Val Leu Glu Lys Gln		
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Ala Arg Glu Thr Ala Ala Tyr Ile Gln Glu Val Glu Gly Asp Asp Thr		
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Asp Arg Val Tyr Asn Thr Asp Lys Lys Lys Thr Asn		
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<212> PRT		
<213> delta-7 sterol C-5 desaturase (Saccharomyces cerevisiae)		
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Tyr Ala Lys Val Leu Pro Ala Ser Leu Ala Ala Asn Ile Pro Val Lys		
	20	25 30
Trp Gln Lys Leu Leu Gly Leu Asn Ser Gly Phe Ser Asn Ser Thr Ile		
	35	40 45
Leu Gln Glu Thr Leu Asn Ser Lys Asn Ala Val Lys Glu Cys Arg Arg		
	50	55 60
Phe Tyr Gly Gln Val Pro Phe Leu Phe Asp Met Ser Thr Thr Ser Phe		
65	70	75 80

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 <212> PRT
 <213> delta-7 sterol C-5 desaturase (Schizosaccharomyces pombe)

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Thr	Ala	Val	Asn	Ser	Thr	Thr	Leu	Gly	Leu	Ala	Glu	Lys	Val	Asn	Phe
		35					40					45			
Ala	Ile	Thr	Ser	Gly	Leu	Leu	Asp	Arg	Asn	Asn	Val	Trp	Arg	Gln	Phe
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Thr	Ser	Leu	Phe	Leu	Ile	Thr	Trp	Ile	Met	Gly	Thr	Leu	Ser	Tyr	Phe
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Leu	Ser	Ala	Ser	Phe	Ala	Tyr	Tyr	Val	Tyr	Phe	Asp	Arg	Glu	Glu	Ala
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Arg	Arg	His	Pro	Lys	Phe	Leu	Lys	Asn	Gln	Glu	His	Leu	Glu	Leu	Met
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Val	Ala	Leu	Lys	Asn	Leu	Pro	Gly	Met	Ala	Ile	Leu	Thr	Ala	Pro	Trp
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Phe	Leu	Ala	Glu	Ile	Arg	Gly	Tyr	Gly	Tyr	Val	Tyr	Asp	Lys	Leu	Asp
	130					135					140				
Glu	Tyr	Gly	Tyr	Phe	Tyr	Leu	Phe	Phe	Ser	Ile	Ala	Leu	Phe	Leu	Leu
	145				150					155					160
Phe	Ser	Asp	Phe	Leu	Ile	Tyr	Trp	Ile	His	Arg	Ala	Leu	His	His	Arg
			165					170						175	
Trp	Leu	Tyr	Ala	Pro	Leu	His	Lys	Leu	His	His	Lys	Trp	Ile	Val	Pro
			180					185					190		
Thr	Pro	Tyr	Ser	Ser	His	Ala	Phe	His	Tyr	Leu	Asp	Gly	Tyr	Ser	Gln
		195					200					205			
Ser	Leu	Pro	Tyr	His	Met	Phe	Pro	Phe	Phe	Phe	Pro	Leu	Asn	Lys	Tyr
		210				215					220				
Val	Tyr	Leu	Leu	Leu	Phe	Gly	Ser	Val	Asn	Tyr	Trp	Thr	Val	Leu	Ile
	225				230					235					240
His	Asp	Gly	Lys	Tyr	Phe	Ser	Asn	Asn	Ala	Val	Val	Asn	Gly	Ala	Ala
			245						250					255	

His His Ala Ala His His Met Tyr Phe Asn Tyr Asn Tyr Gly Gln Phe
 260 265 270
 Phe Thr Leu Phe Asp Arg Leu Cys Ser Ser Tyr Arg Gln Pro Asp Gln
 275 280 285
 Glu Leu Phe Asp Ala Glu Leu Arg Asn Glu Lys Leu Gln Glu Gln Arg
 290 295 300
 Ile Arg Phe Met Glu Thr Val Gln Tyr Thr Val Glu Gly Lys Asp Asp
 305 310 315 320
 Arg Thr Tyr Ala Ser Lys Lys Asp Asn
 325

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 <213> DWF7/STE1 (Arabidopsis)

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 20 25 30
 Glu Pro Leu Pro His Phe Leu Gln Thr Trp Leu Arg Asn Tyr Leu Ala
 35 40 45
 Gly Thr Leu Leu Tyr Phe Ile Ser Gly Phe Leu Trp Cys Phe Tyr Ile
 50 55 60
 Tyr Tyr Leu Lys Ile Asn Val Tyr Leu Pro Lys Asp Ala Ile Pro Thr
 65 70 75 80
 Ile Lys Ala Met Arg Leu Gln Met Phe Val Ala Met Lys Ala Met Pro
 85 90 95
 Trp Tyr Thr Leu Leu Pro Thr Val Ser Glu Ser Met Ile Glu Arg Gly
 100 105 110
 Trp Thr Lys Cys Phe Ala Ser Ile Asp Glu Phe Gly Trp Ile Leu Tyr
 115 120 125
 Phe Val Tyr Ile Ala Ile Tyr Leu Val Phe Val Glu Phe Gly Ile Tyr
 130 135 140
 Trp Met His Arg Glu Leu His Asp Ile Lys Pro Leu Tyr Lys Tyr Leu
 145 150 155 160
 His Ala Thr His His Ile Tyr Asn Lys Gln Asn Thr Leu Ser Pro Phe
 165 170 175

Ala Gly Leu Ala Phe His Pro Val Asp Gly Ile Leu Gln Ala Val Pro
 180 185 190

His Val Ile Ala Leu Phe Ile Val Pro Ile His Phe Thr Thr His Ile
 195 200 205

Gly Leu Leu Phe Met Glu Ala Ile Trp Thr Ala Asn Ile His Asp Cys
 210 215 220

Ile His Gly Asn Ile Trp Pro Val Met Gly Ala Gly Tyr His Thr Ile
 225 230 235 240

His His Thr Thr Tyr Lys His Asn Tyr Gly His Tyr Thr Ile Trp Met
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Asp Trp Met Phe Gly Ser Leu Arg Asp Pro Leu Leu Glu Glu Asp Asp
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Asn Lys Asp Ser Phe Lys Lys Ala Glu
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<211> 291

<212> PRT

<213> delta-7 sterol C-5 desaturase consensus

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 20 25 30

Leu Glu Thr Leu Asn Lys Val Asn Tyr Gly Pro Phe Leu Phe Asp Phe
 35 40 45

Thr Glu Thr Ser Phe Ser Leu Leu Pro Arg Asn Asn Leu Trp Arg Glu
 50 55 60

Phe Leu Ser Leu Trp Leu Ile Val Thr Ile Phe Gly Leu Leu Tyr Ile
 65 70 75 80

Ala Ser Leu Ser Tyr Phe Phe Asp Ile Phe Asn His Pro Lys Tyr Leu
 85 90 95

Lys Asn Gln Met Leu Glu Ile Lys Ala Val Ala Ile Pro Trp Met Ser
 100 105 110

Leu Leu Thr Val Pro Trp Phe Met Glu Leu Gly Tyr Ser Lys Leu Tyr
 115 120 125

Lys Ile Asp Glu His Gly Arg Lys Leu Phe Ile Glu Ala Thr Phe Phe
 130 135 140

Phe Thr Asp Gly Ile Tyr Ala His Arg Trp Leu His Trp Pro Tyr Lys
 145 150 155 160
 Ala Leu His Lys Pro His His Lys Trp Leu Val Cys Thr Pro Phe Ala
 165 170 175
 Ser His Ala Phe His Pro Val Asp Gly Tyr Leu Gln Ser Leu Tyr His
 180 185 190
 Ile Tyr Pro Leu Leu Pro Leu His Lys Ser Tyr Leu Leu Phe Thr Phe
 195 200 205
 Val Asn Phe Trp Thr Val Met Ile His Asp Gly Gln Ser Asn Asn Pro
 210 215 220
 Val Val Asn Gly Ala Cys His Thr Val His His Leu Tyr Phe Asn Tyr
 225 230 235 240
 Asn Tyr Gly Gln Phe Thr Thr Leu Trp Asp Arg Leu Gly Gly Ser Tyr
 245 250 255
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 Lys Lys Asn
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Glu Pro Leu Pro His Phe Leu Gln Thr Trp Leu Arg Asn Tyr Leu Ala
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Gly Thr Leu Leu Tyr Phe Ile Ser Gly Phe Leu Trp Cys Phe Tyr Ile
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Tyr Tyr Leu Lys Ile Asn Val Tyr Leu Pro Lys Asp Ala Ile Pro Thr
          65                      70                      75                      80

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Ile Lys Ala Met Arg Leu Gln Met Phe Val Ala Met Lys Ala Met Pro
                85                      90                      95

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Trp Tyr Thr Leu Leu Pro Thr Val Ser Glu Ser Met Ile Glu Arg Gly
          100                      105                      110

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Trp Thr Lys Cys Phe Ala Ser Ile Asp Glu Phe Gly Trp Ile Leu Tyr
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Phe Val Tyr Ile Ala Ile Tyr Leu Val Phe Val Glu Phe Gly Ile Tyr
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Trp Met His Arg Glu Leu His Asp Ile Lys Pro Leu Tyr Lys Tyr Leu
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His Ala Thr His His Ile Tyr Asn Lys Gln Asn Thr Leu Ser Pro Phe
                165                      170                      175

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His Val Ile Ala Leu Phe Ile Val Pro Ile His Phe Thr Thr His Ile
195 200 205

Gly Leu Leu Phe Met Glu Ala Ile Trp Thr Ala Asn Ile His Asp Cys
210 215 220

Ile His Gly Asn Ile Trp Pro Val Met Gly Ala Gly Tyr His Thr Ile
225 230 235 240

His His Thr Thr Tyr Lys His Asn Tyr Gly His Tyr Thr Ile Trp Met
245 250 255

Asp Trp Met Phe Gly Ser Leu Arg Asp Pro Leu Leu Glu Glu Asp Asp
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Asn Lys Asp Ser Phe Lys Lys Ala Glu
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ttttcagttt gttcttcttt agttcttgta aaagattggg agcatttagt ttcttaccag 180
aaaagacttt gtcagcagct gcttgtaact caaatcacat tttgcattcc ttatccataa 240
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gtttcatggc ggcgactatg gcagattata atgatcagat cgtcaatgag acctcttttt 1560

Cys Phe Leu Tyr Ile Ala Leu Tyr Leu Val Leu Val Glu Phe Met Ile
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Tyr Trp Val His Lys Glu Leu His Asp Ile Lys Phe Leu Tyr Lys His
 145 150 155 160

Leu His Ala Thr His His Met Tyr Asn Lys Gln Asn Thr Leu Ser Pro
 165 170 175

Phe Ala Gly Leu Ala Phe His Pro Leu Asp Gly Ile Leu Gln Ala Ile
 180 185 190

Pro His Val Ile Ala Leu Phe Ile Val Pro Ile His Leu Ile Thr His
 195 200 205

Leu Ser Leu Leu Phe Leu Glu Gly Ile Trp Thr Ala Ser Ile His Asp
 210 215 220

Cys Ile His Gly Asn Ile Trp Pro Ile Met Gly Ala Gly Tyr His Thr
 225 230 235 240

Ile His His Thr Thr Tyr Lys His Asn Tyr Gly His Tyr Thr Ile Trp
 245 250 255

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 260 265 270

Ser Phe Lys Glu Lys Glu Lys
 275

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 <212> PRT
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Glu Pro Leu Pro His Phe Leu Gln Thr Trp Leu Arg Asn Tyr Leu Ala
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Gly Thr Leu Leu Tyr Phe Ile Ser Gly Phe Leu Trp
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 <212> PRT
 <213> dwf7-1

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20 25 30

Glu Pro Leu Pro His Phe Leu Gln Thr Trp Leu Arg Asn Tyr Leu Ala
35 40 45

Gly Thr Leu Leu Tyr Phe Ile Ser Gly Phe Leu Trp Cys Phe Tyr Ile
50 55 60

Tyr Tyr Leu Lys Ile Asn Val Tyr Leu Pro Lys Asp Ala Ile Pro Thr
65 70 75 80

Ile Lys Ala Met Arg Leu Gln Met Phe Val Ala Met Lys Ala Met Pro
85 90 95

Trp Tyr Thr Leu Leu Pro Thr Val Ser Glu Ser Met Ile Glu Arg Gly
100 105 110

Trp Thr Lys Cys Phe Ala Ser Ile Asp Glu Phe Gly Trp Ile Leu Tyr
115 120 125

Phe Val Tyr Ile Ala Ile Tyr Leu Val Phe Val Glu Phe Gly Ile Tyr
130 135 140

Trp Met His Arg Glu Leu His Asp Ile Lys Pro Leu Tyr Lys Tyr Leu
145 150 155 160

His Ala Thr His His Ile Tyr Asn Lys Gln Asn Thr Leu Ser Pro Phe
165 170 175

Ala Gly Leu Ala Phe His Pro Val Asp Gly Ile Leu Gln Ala Val Pro
180 185 190

His Val Ile Ala Leu Phe Ile Val Pro Ile His Phe Thr Thr His Ile
195 200 205

Gly Leu Leu Phe Met Glu Ala Ile Trp Thr Ala Asn Ile His Asp Cys
210 215 220

Ile His Gly Asn Ile Trp
225 230